

COLUMN (J)

B: BOOLEAN FUNCTION

OBJECT								
OP-CODE	000	001	010	011	100	101	110	111

GEOMETRIC LAYOUT OF DEVICE FOR N = 4

FIG. 1

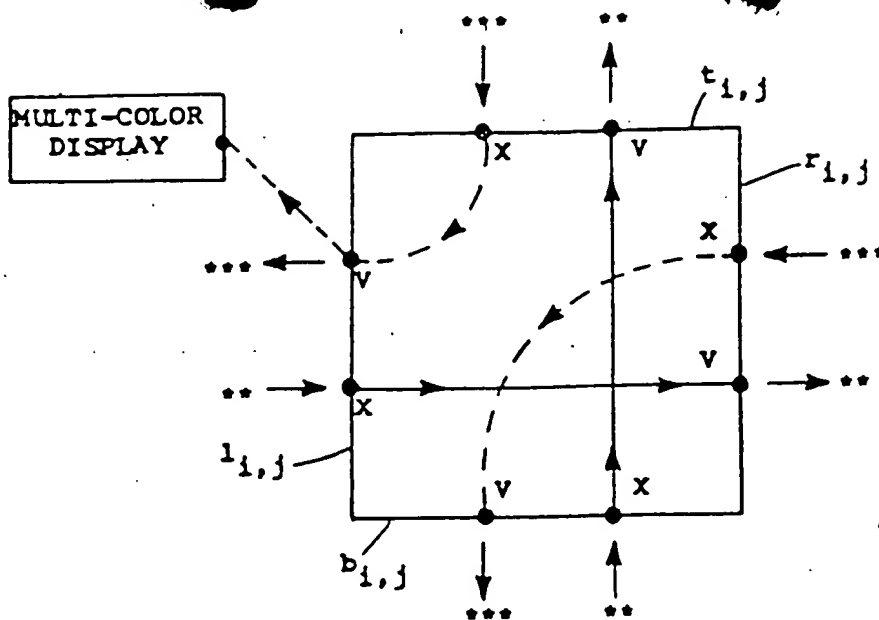


FIG. 2a

SWITCH $W_{i,j}$: ON ("1")

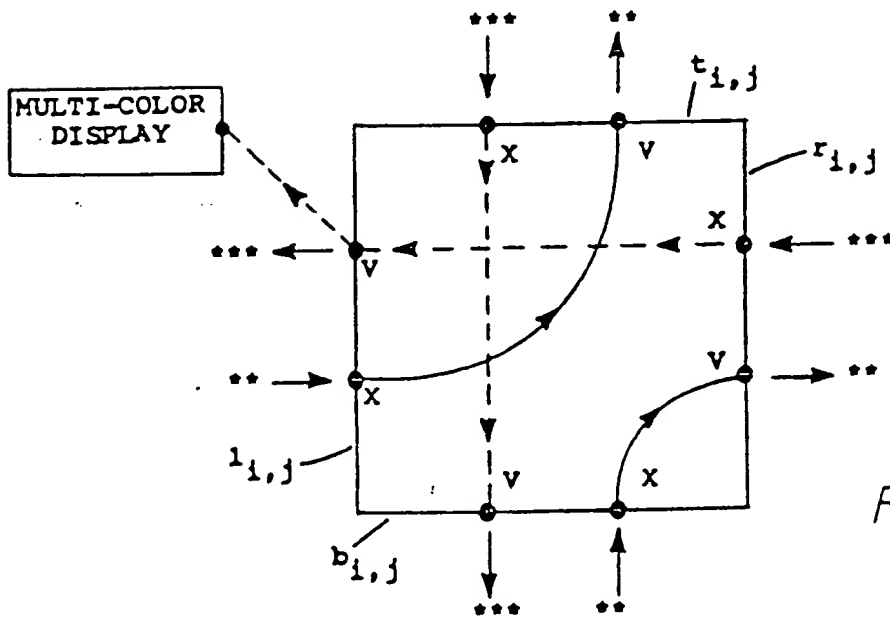
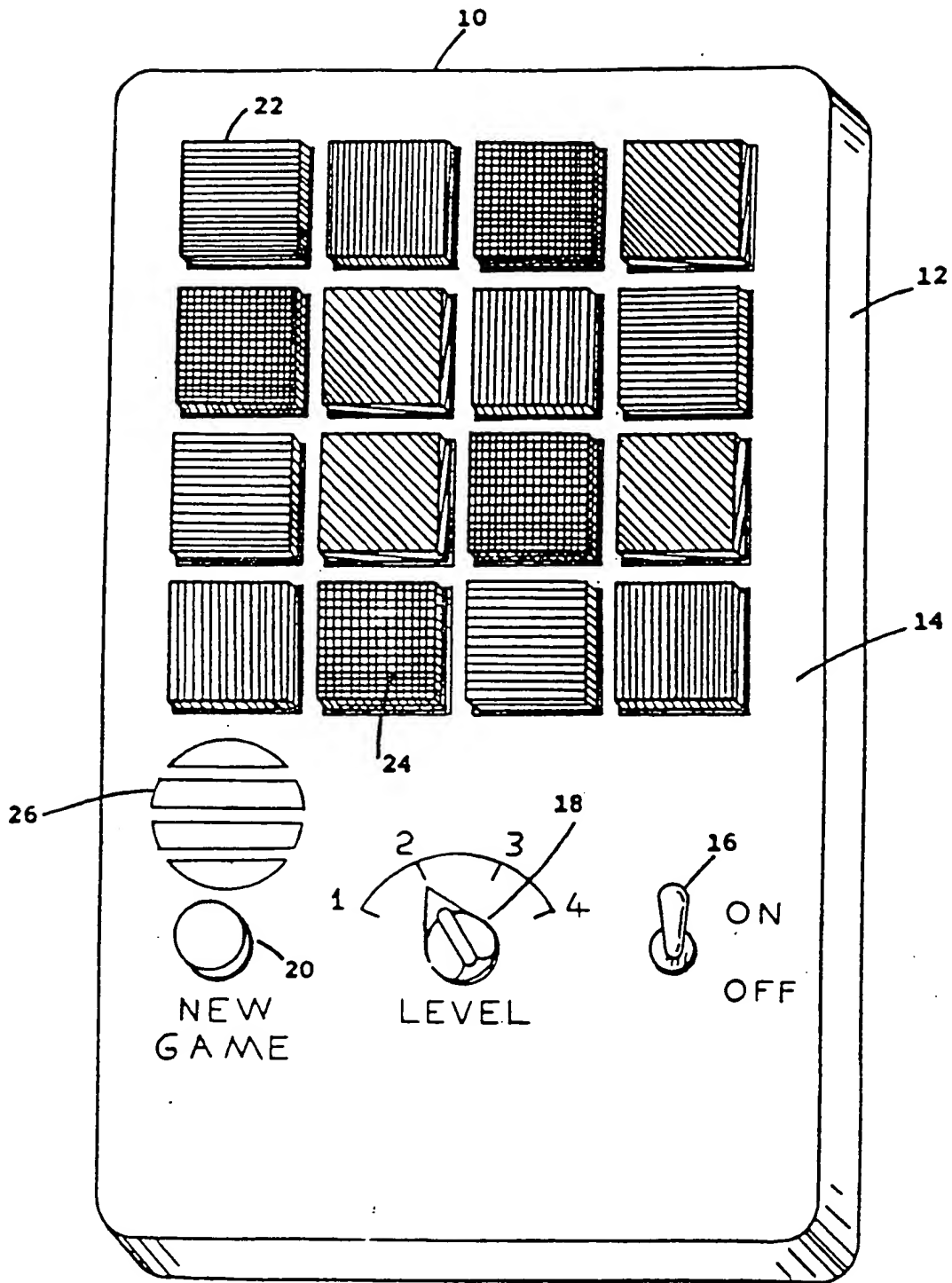


FIG. 2b

SWITCH $W_{i,j}$: OFF ("0")

LEGEND: $**$ OP-CODE
 $***$ COLOR CODE

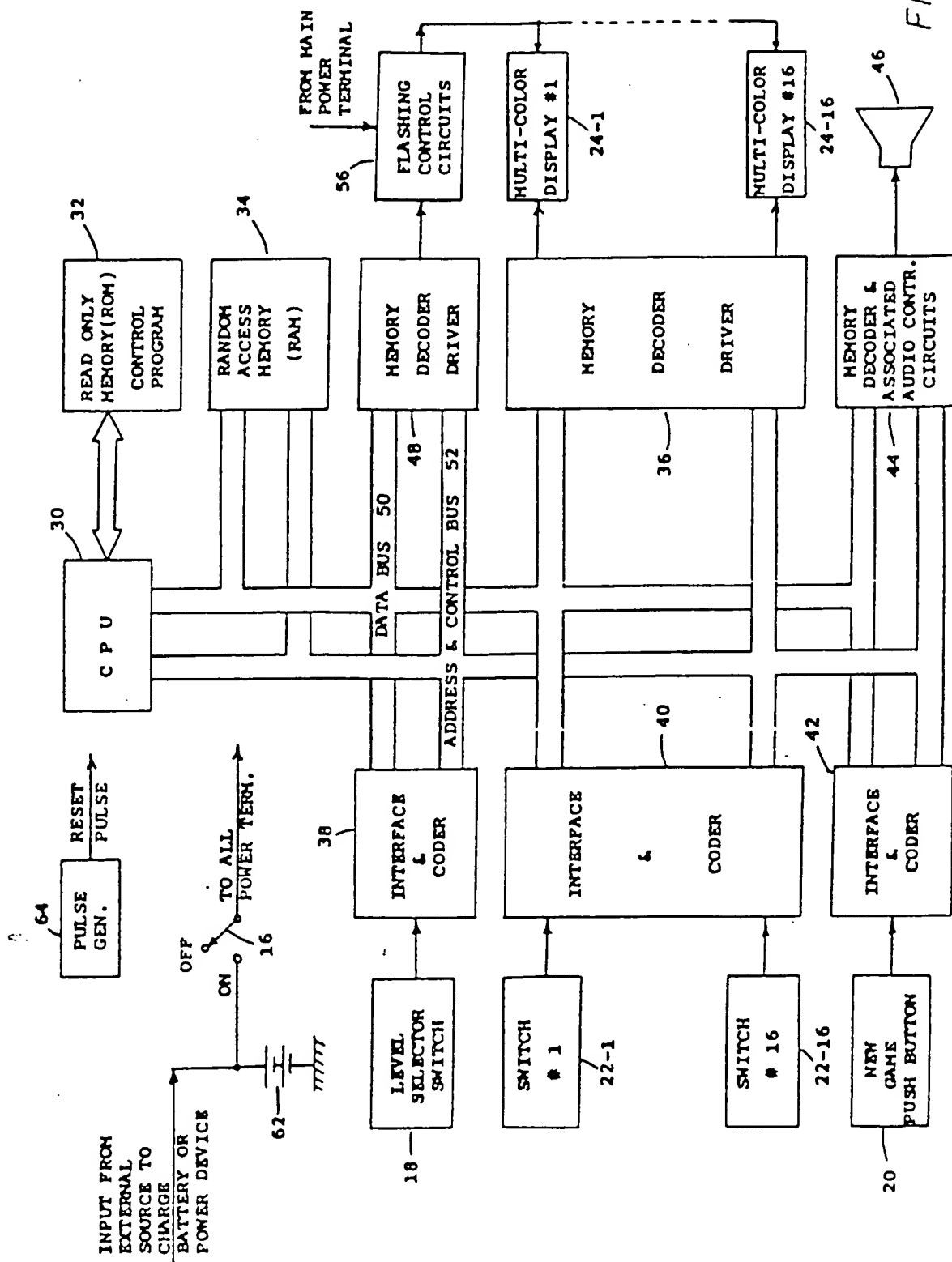
ROUTING SQUARE $S_{i,j}$



HAND HELD LOGIC GAME DEVICE

FIG. 3

FIG. 4



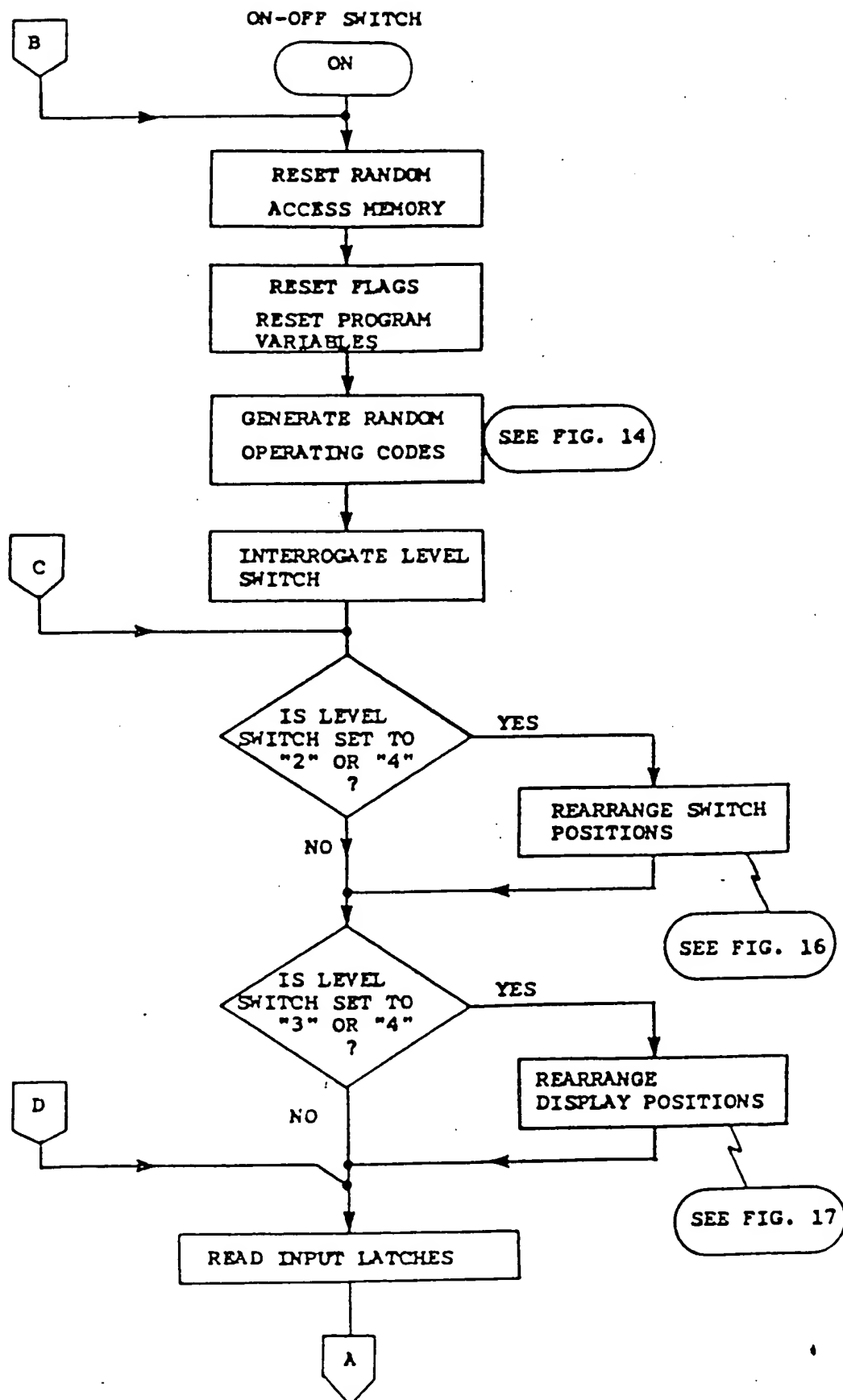


FIG. 5

08 ~~SECRET~~
962971

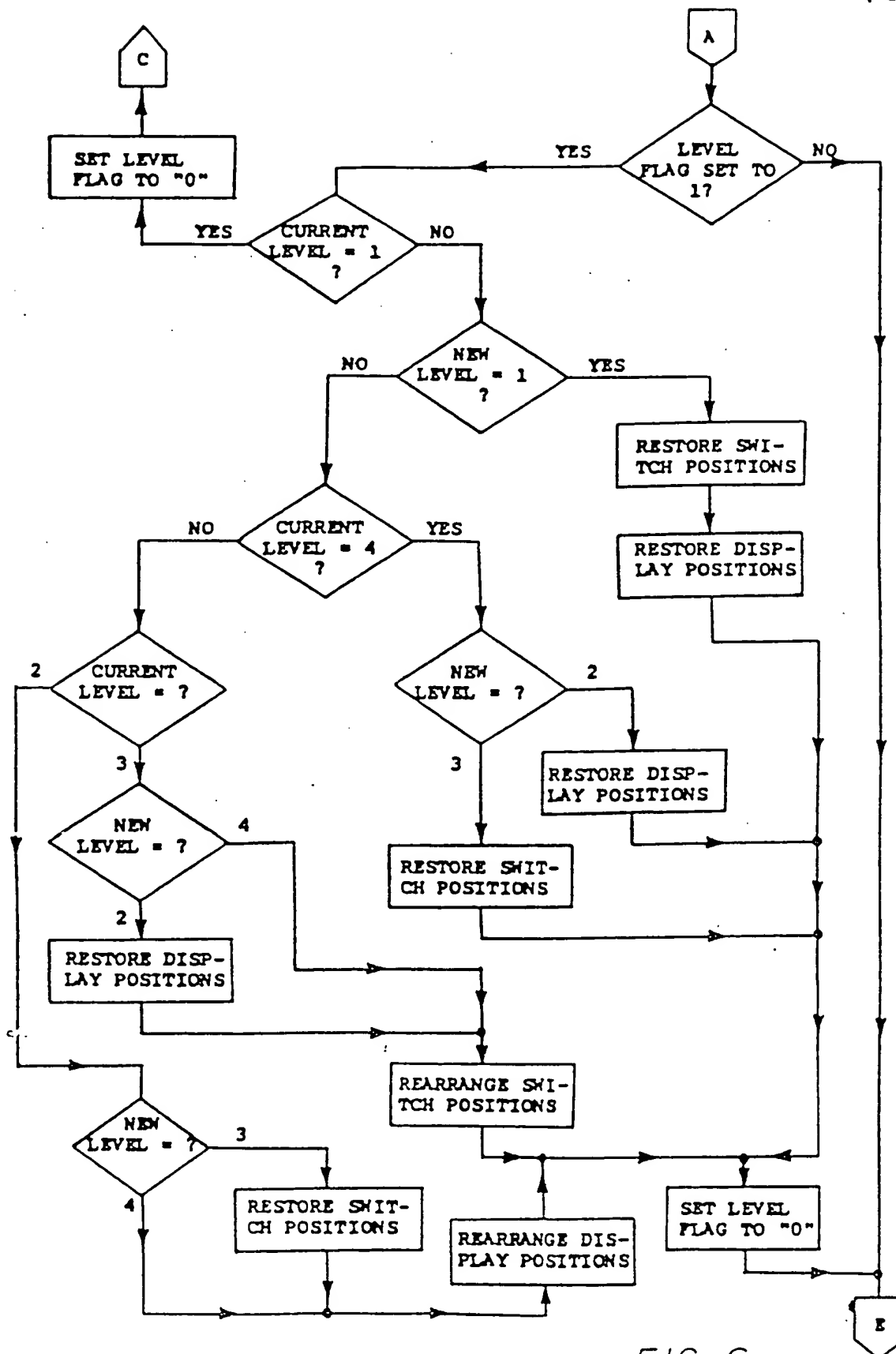


FIG. 6

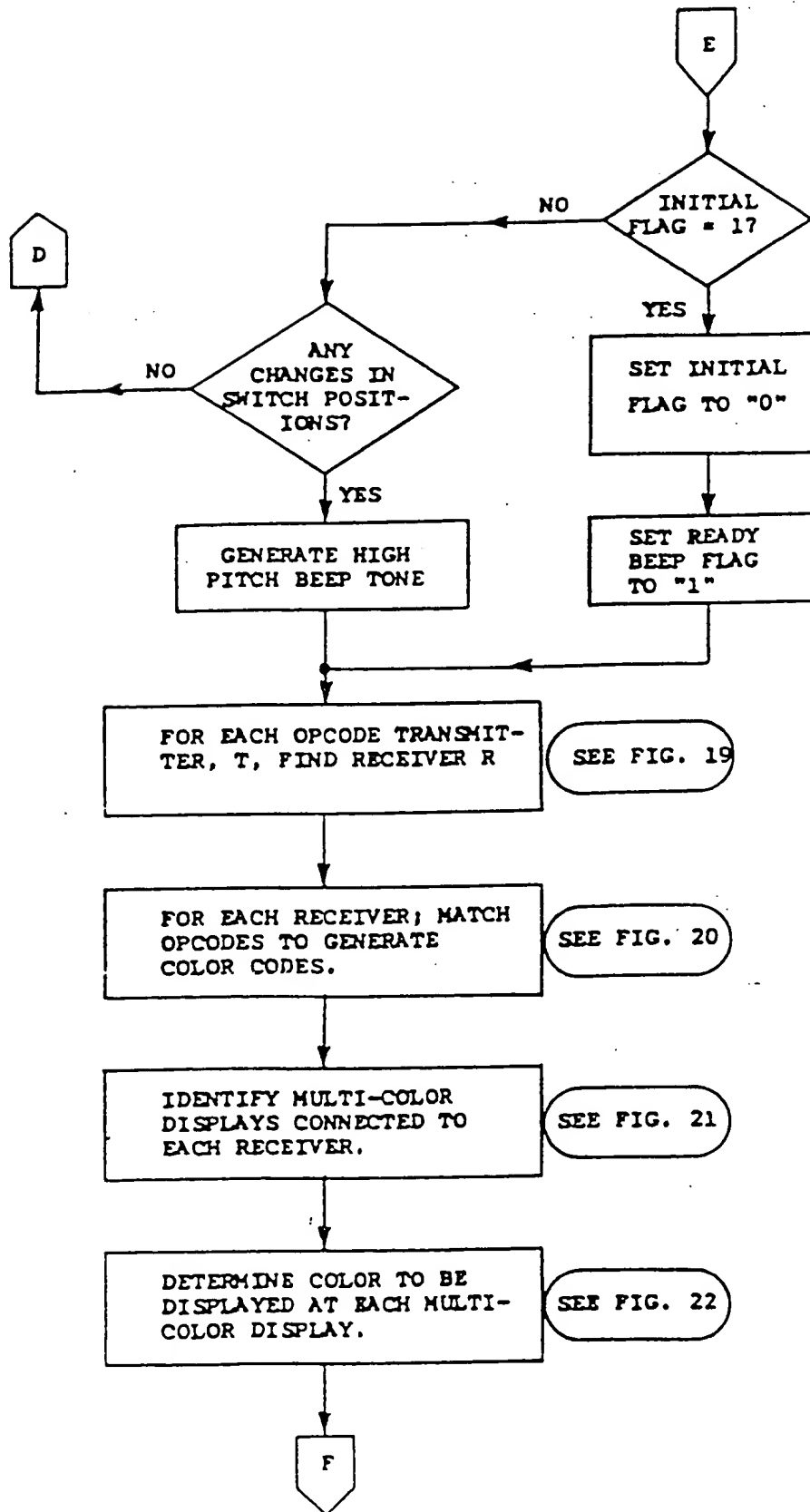


FIG. 7

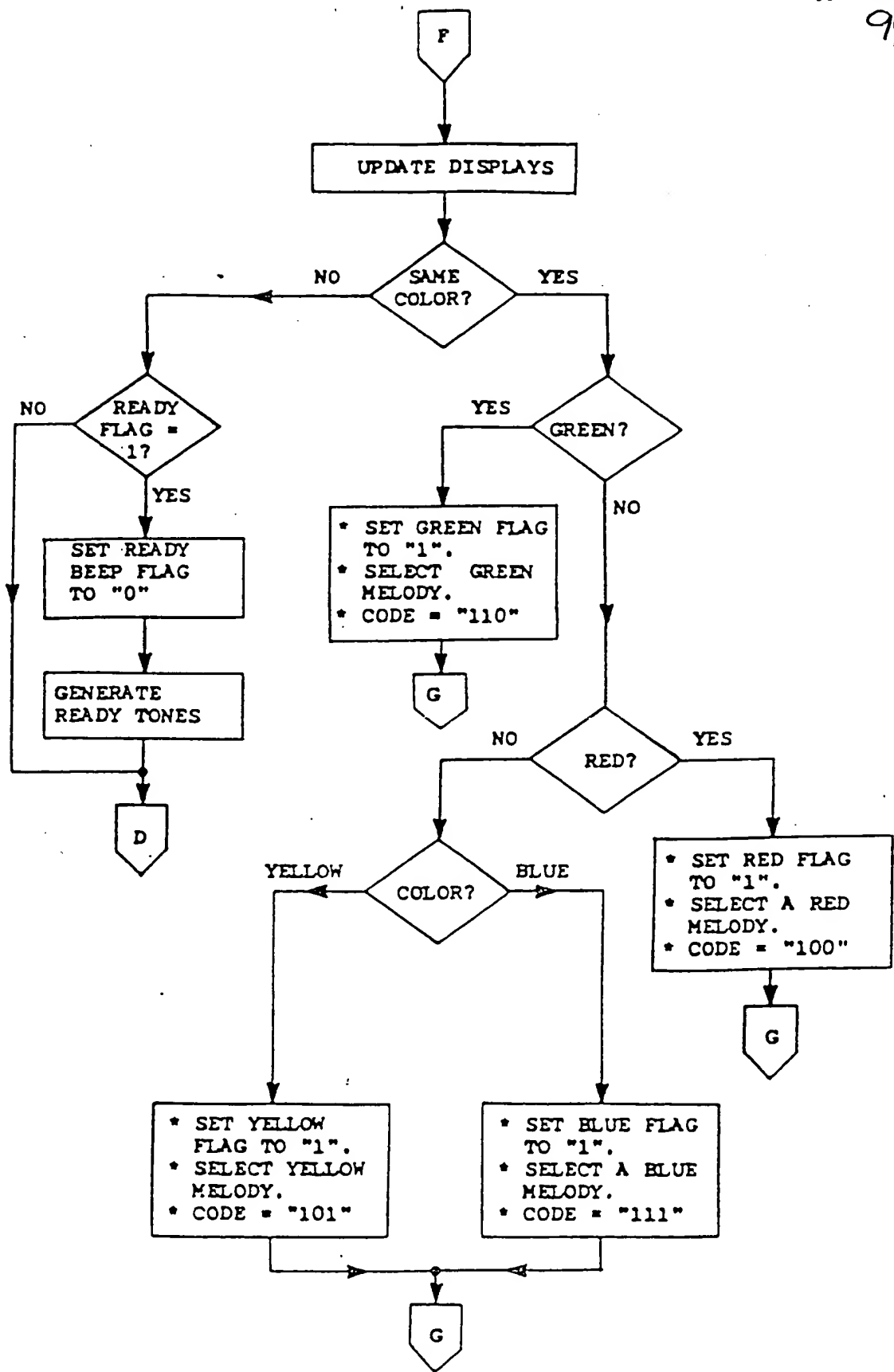


FIG. 8

377589
377589
962971

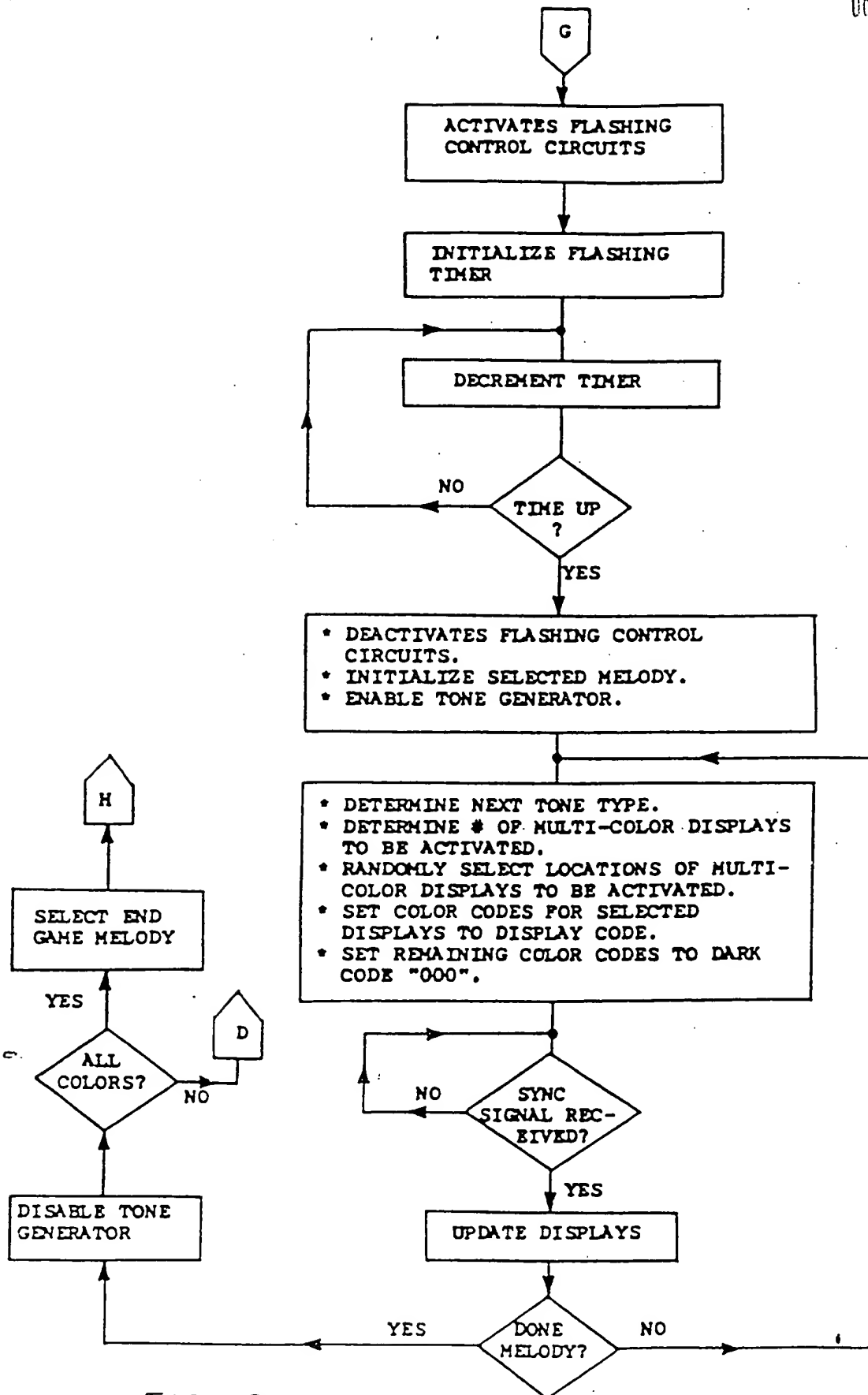


FIG. 9

00 ~~SECRET~~
962971

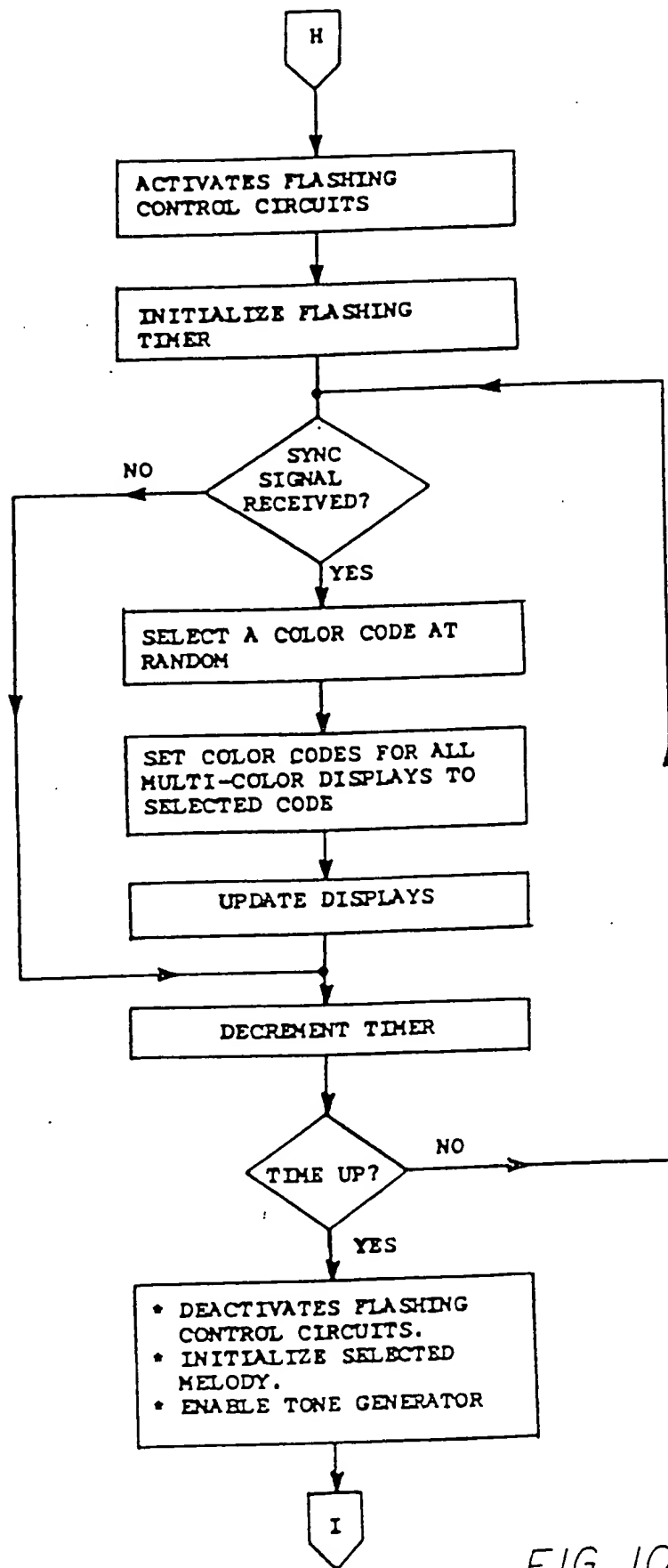


FIG. 10

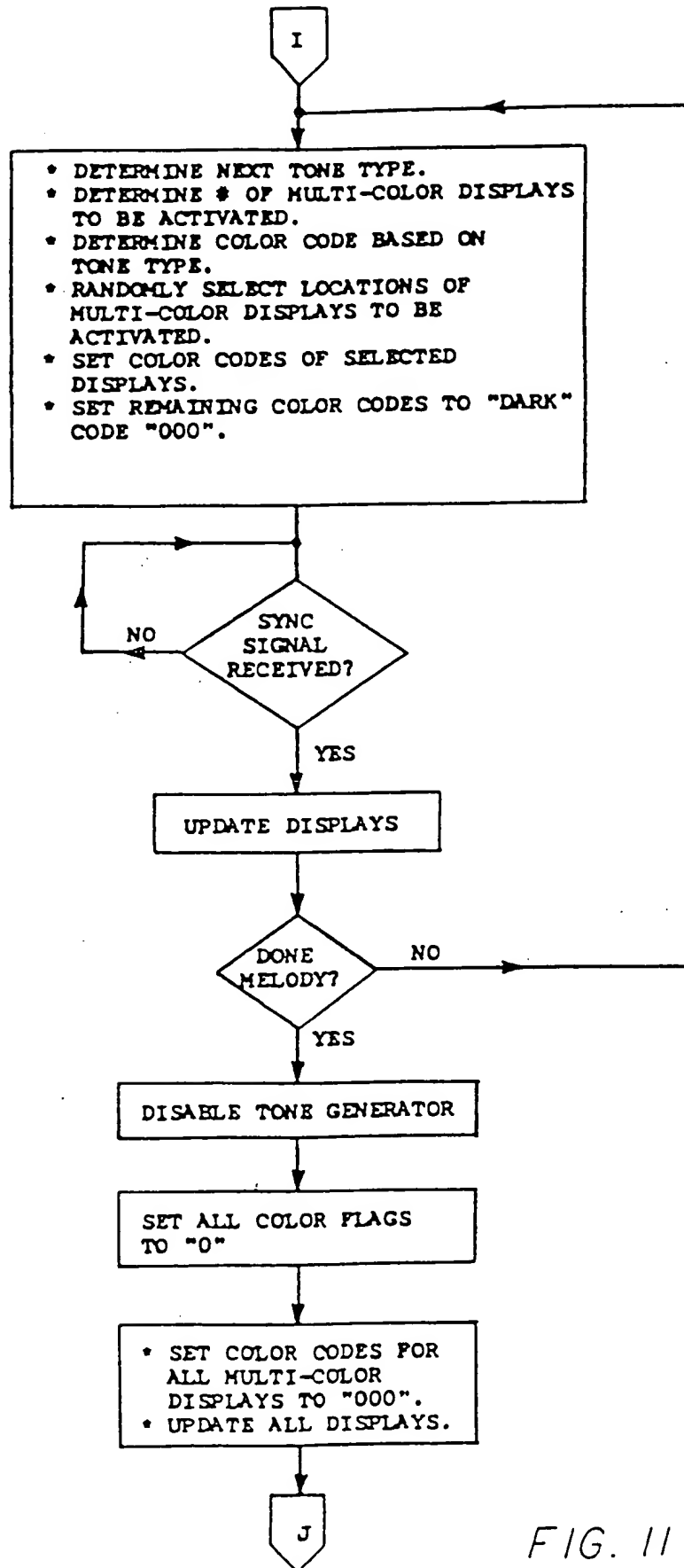


FIG. 11

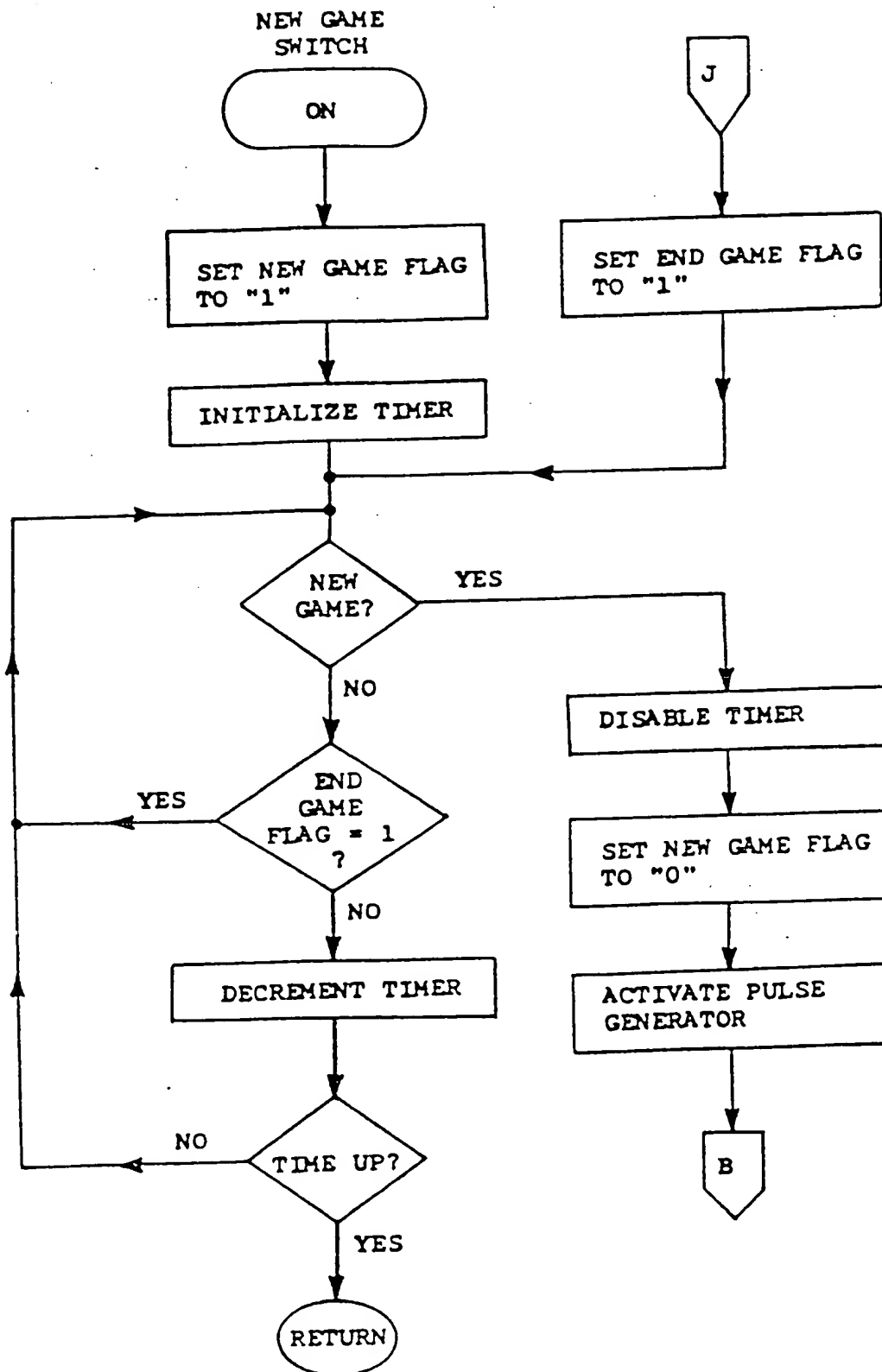


FIG. 12

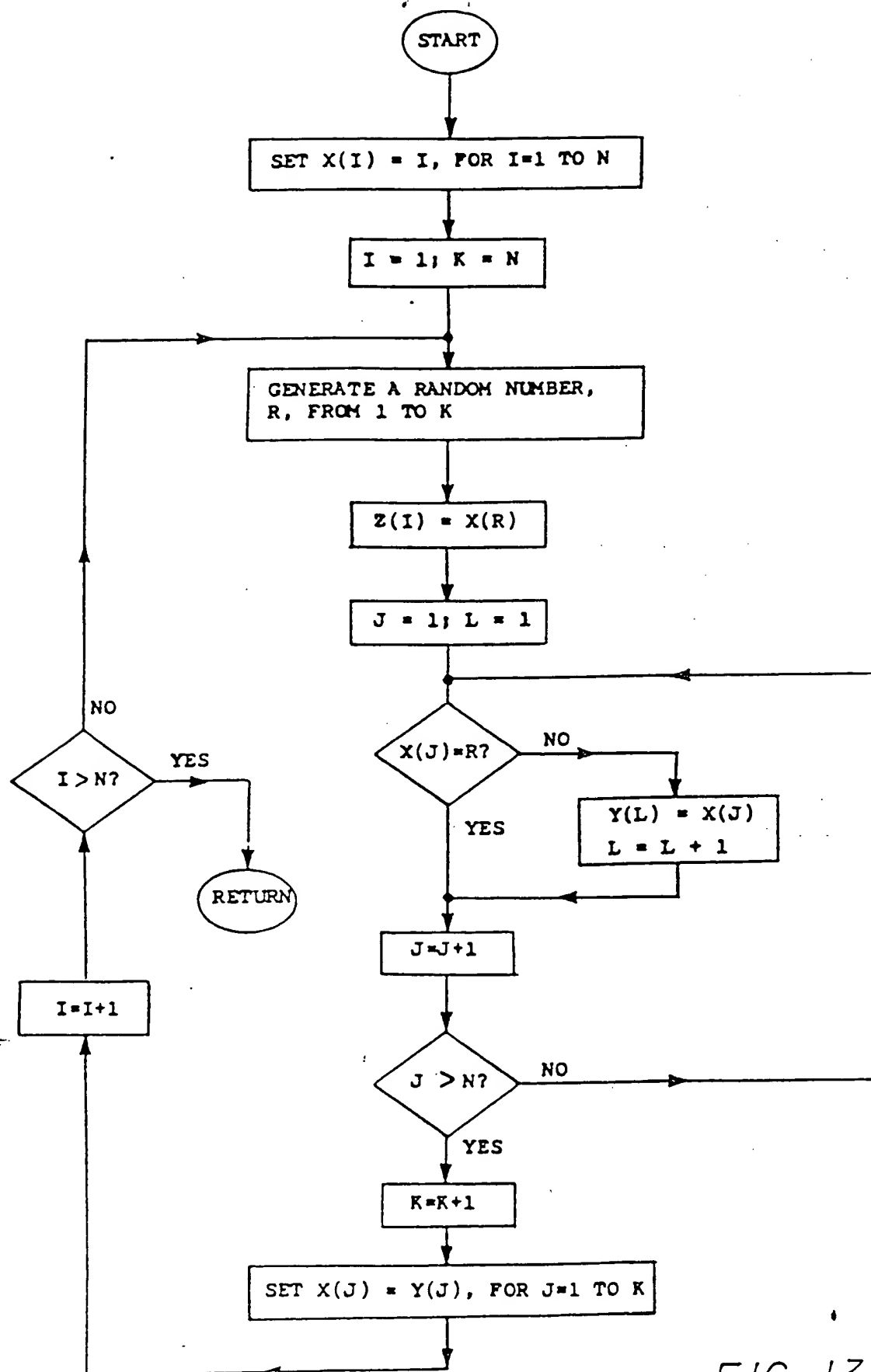


FIG. 13

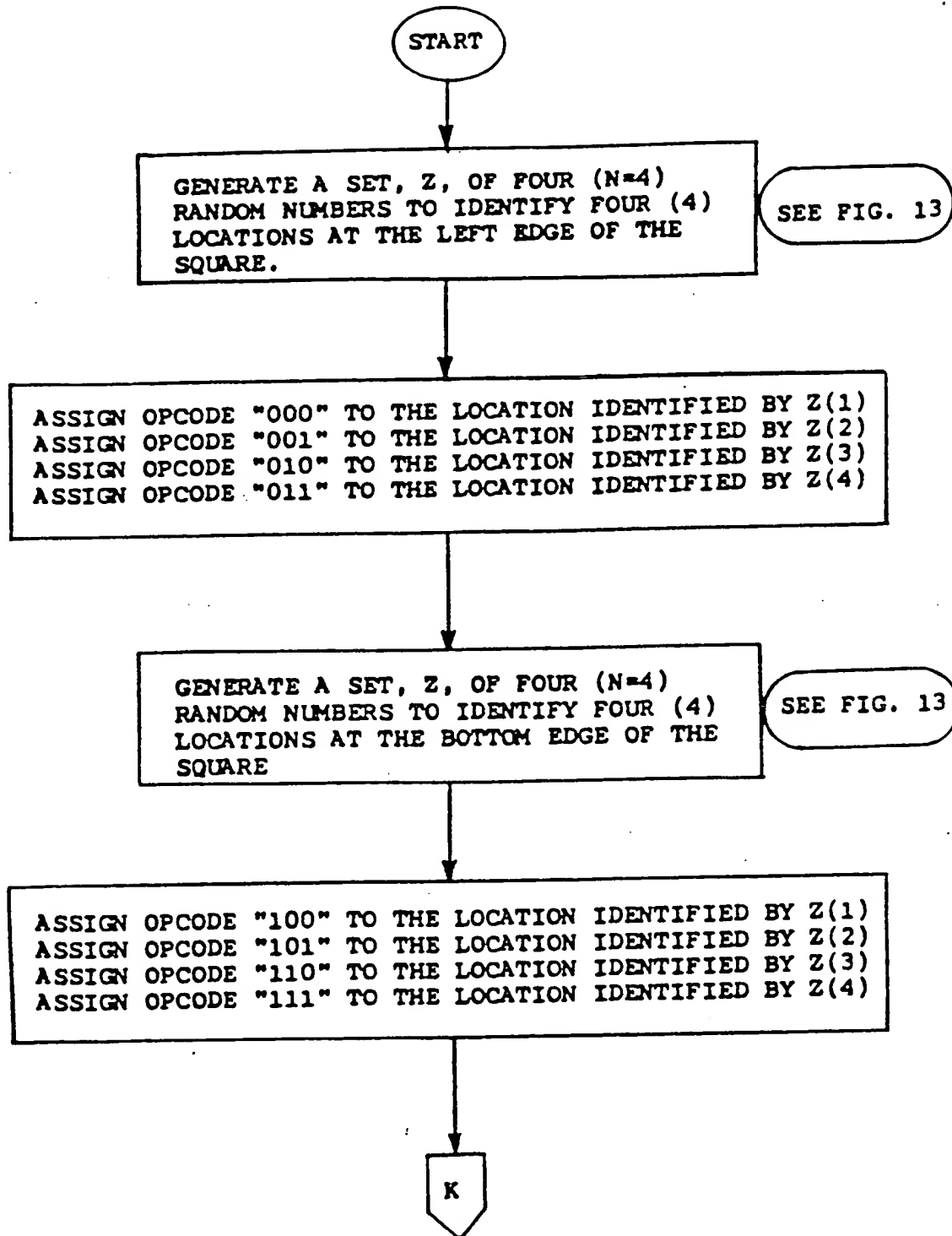


FIG. 14

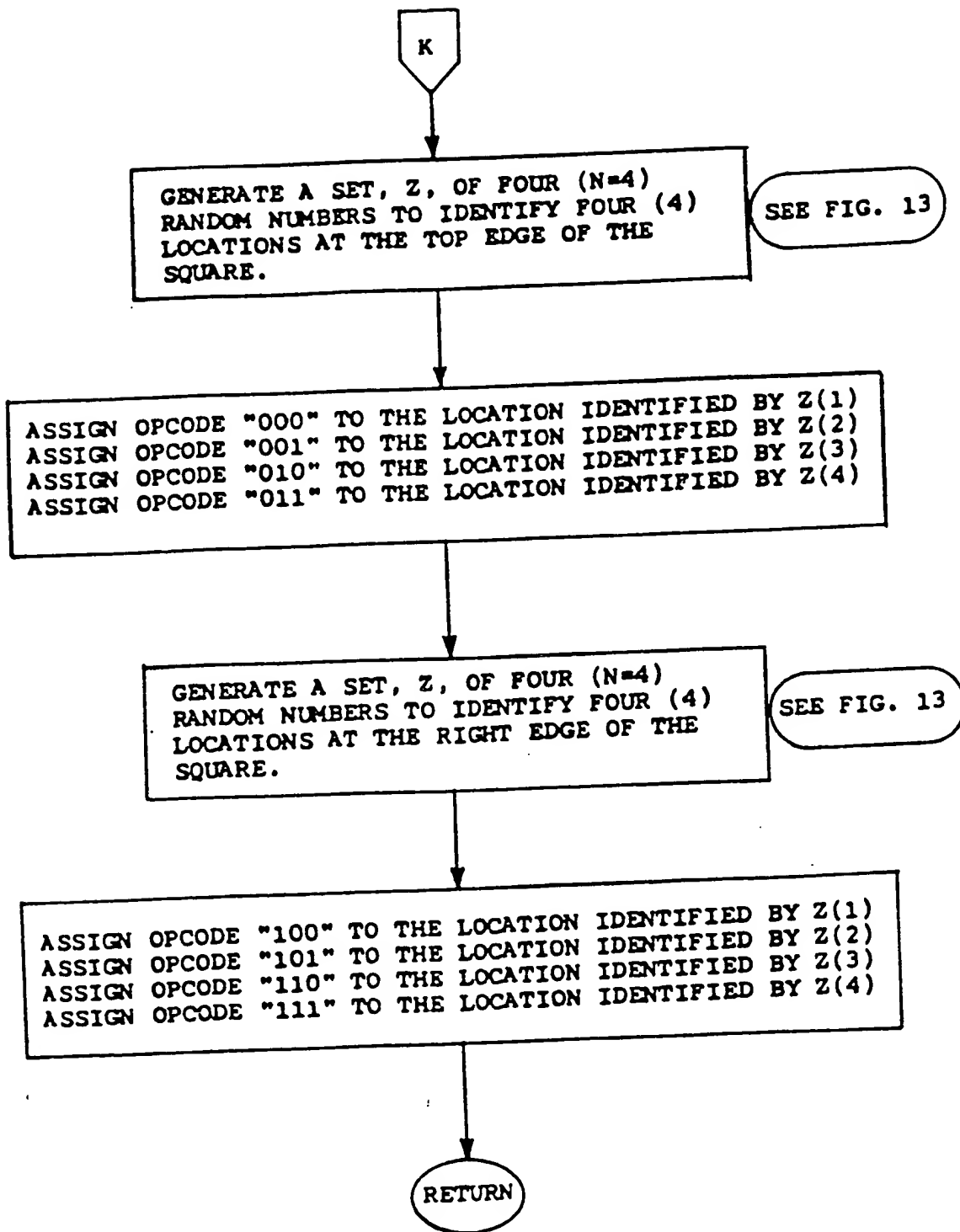


FIG. 15

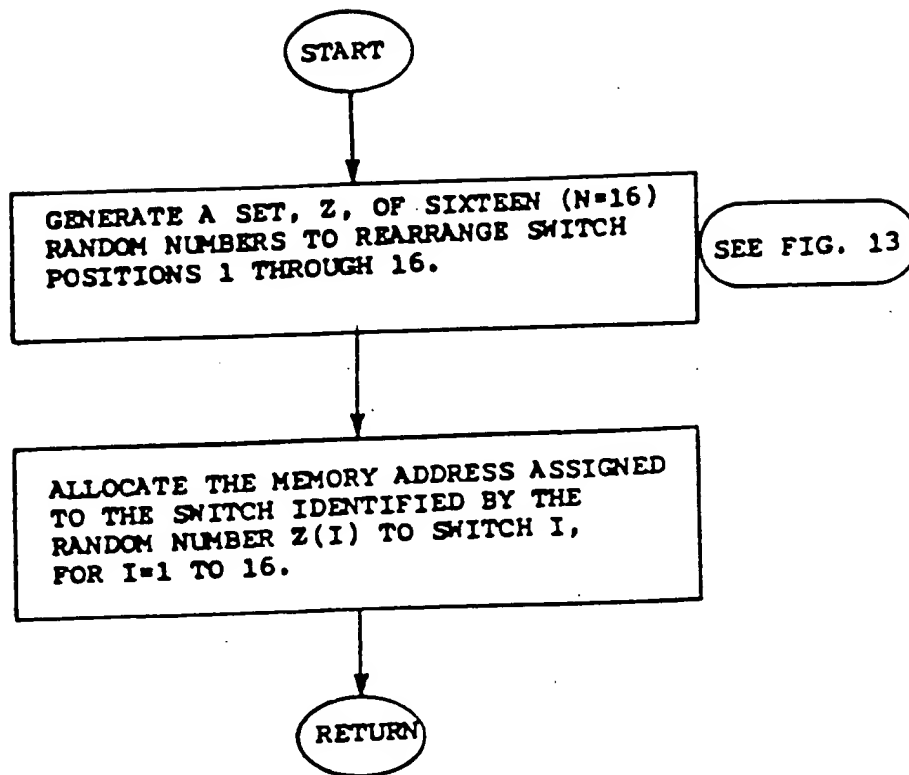


FIG. 16

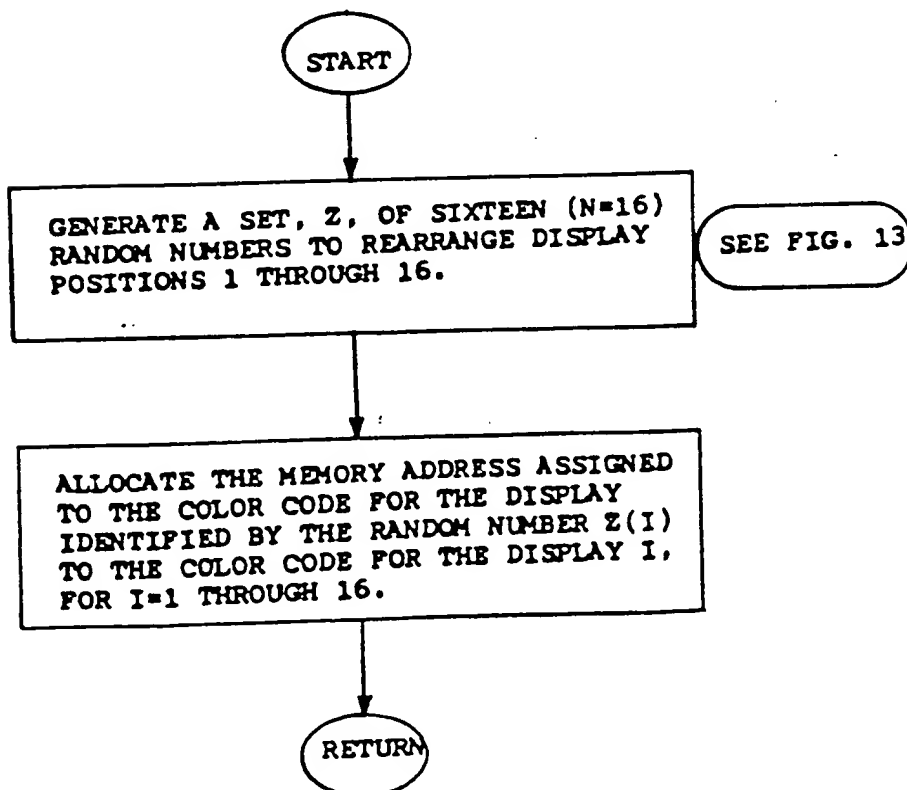


FIG. 17

LEGEND

- N : DIMENSION OF LOGIC GAME = NUMBER OF PREDETERMINED COLORS WHICH MAY BE DISPLAYED.
 = 4 (FOR THE PREFERRED EMBODIMENT)
- n : NUMBER OF BINARY BITS IN OPCODE AND COLOR CODE.
 = $\ln N + 1 = 3$ (FOR THE PREFERRED EMBODIMENT)
- I : ROW NUMBER I, $I = 1, \dots, N$
- J : COLUMN NUMBER J, $J = 1, \dots, N$
- DIR : ROUTE DIRECTION BETWEEN TWO ADJACENT ROUTING SQUARES;
 "R" DENOTES RIGHT
 "U" DENOTES UP
 "L" DENOTES LEFT
 "D" DENOTES DOWN
- T : OPCODE TRANSMITTER; $T = 1, \dots, 2N$
- R : OPCODE RECEIVER; $R = 1, \dots, 2N$
- RC(T) : RECEIVER CONNECTED TO TRANSMITTER "T"
- TC(R) : TRANSMITTER CONNECTED TO RECEIVER "R"
- W(I,J) : STATUS OF SWITCH LOCATED AT ROW "I" AND COLUMN "J"
- TCODE(T) : OPCODE AT TRANSMITTER "T"
- RCODE(R) : OPCODE AT RECEIVER "R"
- C(R) : COLOR CODE AT RECEIVER "R"
- x(i) : THE i th BIT OF OPCODE "X"
- y(i) : THE i th BIT OF OPCODE "Y"
- cb(i) : THE i th BIT OF COLOR CODE "C"
- C1(I,J) : COLOR CODE AT THE RIGHT EDGE OF THE ROUTING SQUARE LOCATED AT ROW "I" AND COLUMN "J"
- C2(I,J) : COLOR CODE AT THE TOP EDGE OF THE ROUTING SQUARE LOCATED AT ROW "I" AND COLUMN "J"
- C(I,J) : COLOR CODE SELECTED FOR DISPLAY AT THE ROUTING SQUARE LOCATED AT ROW "I" AND COLUMN "J"
- ⊕ : EXCLUSIVE OR BOOLEAN FUNCTION
- ⊙ : INCLUSIVE OR BOOLEAN FUNCTION

EXPLANATION OF PROGRAM VARIABLES OF FIGS. 19 - 22

FIG. 18

NOTE:

* SEE FIGURE 18 FOR EXPLANATION OF PROGRAM VARIABLES.

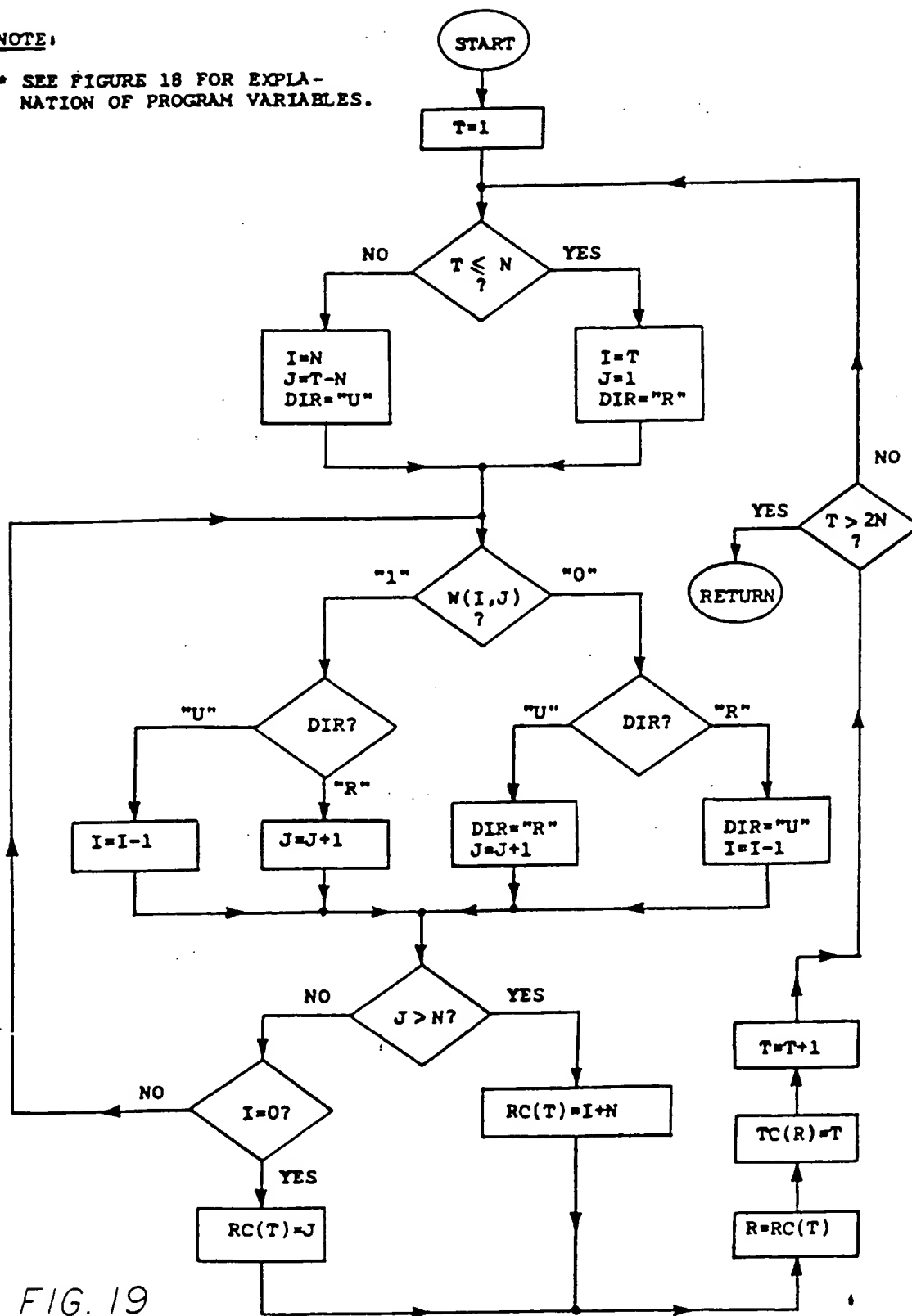
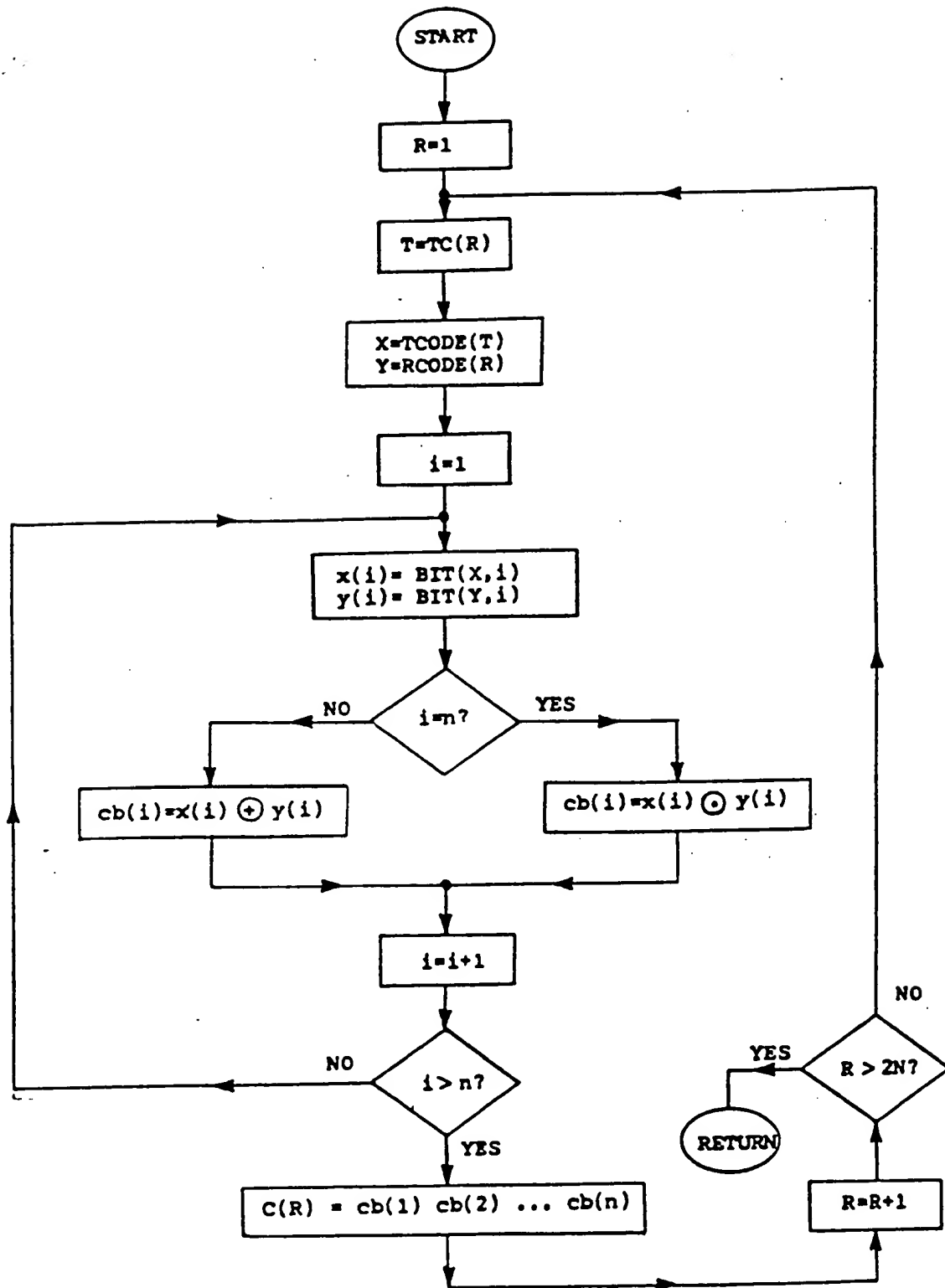


FIG. 19

**NOTE:**

- SEE FIGURE 18 FOR EXPLANATION OF PROGRAM VARIABLES.

FIG. 20

NOTE:

- SEE FIGURE 18 FOR EXPLANATION OF PROGRAM VARIABLES.

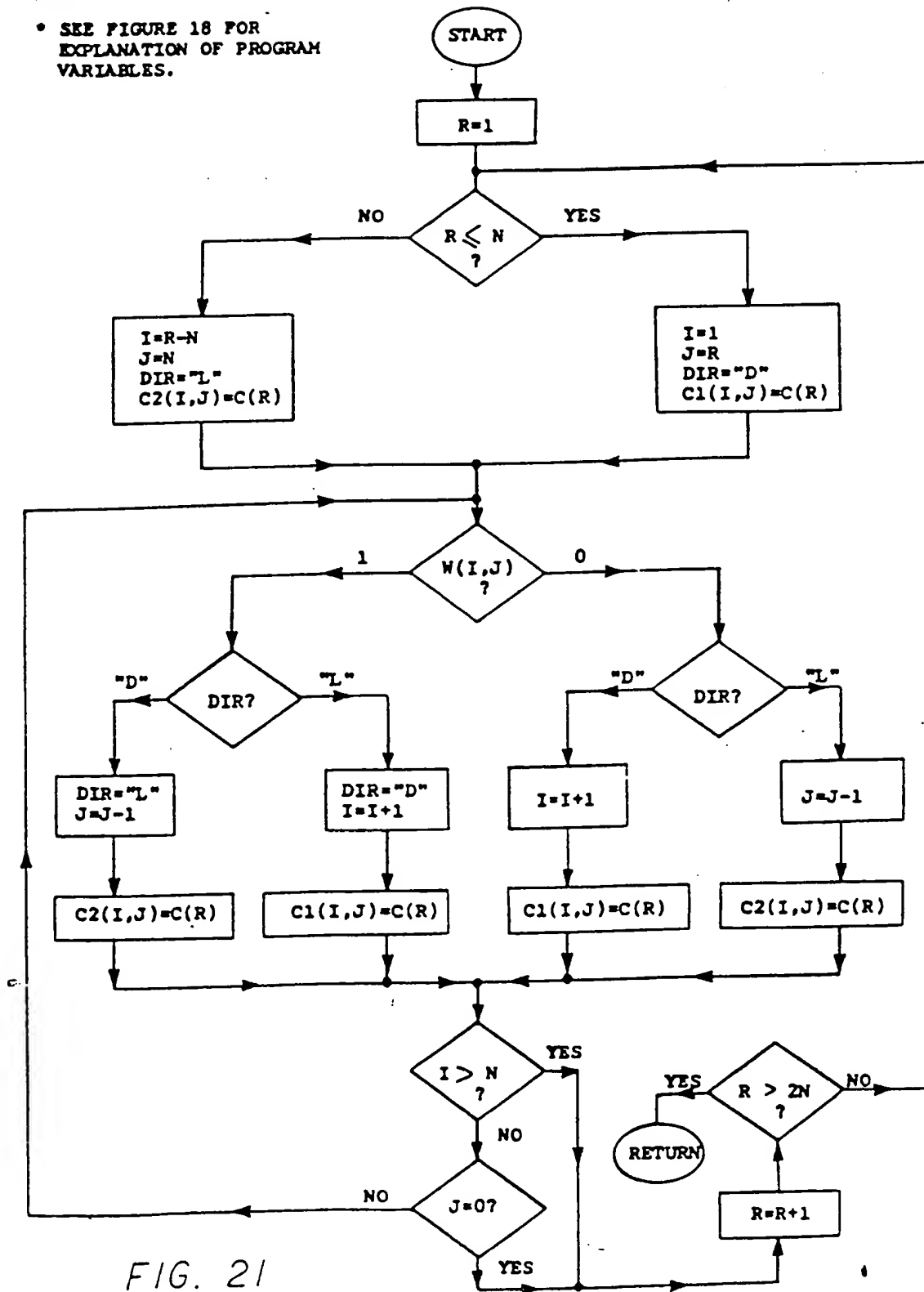
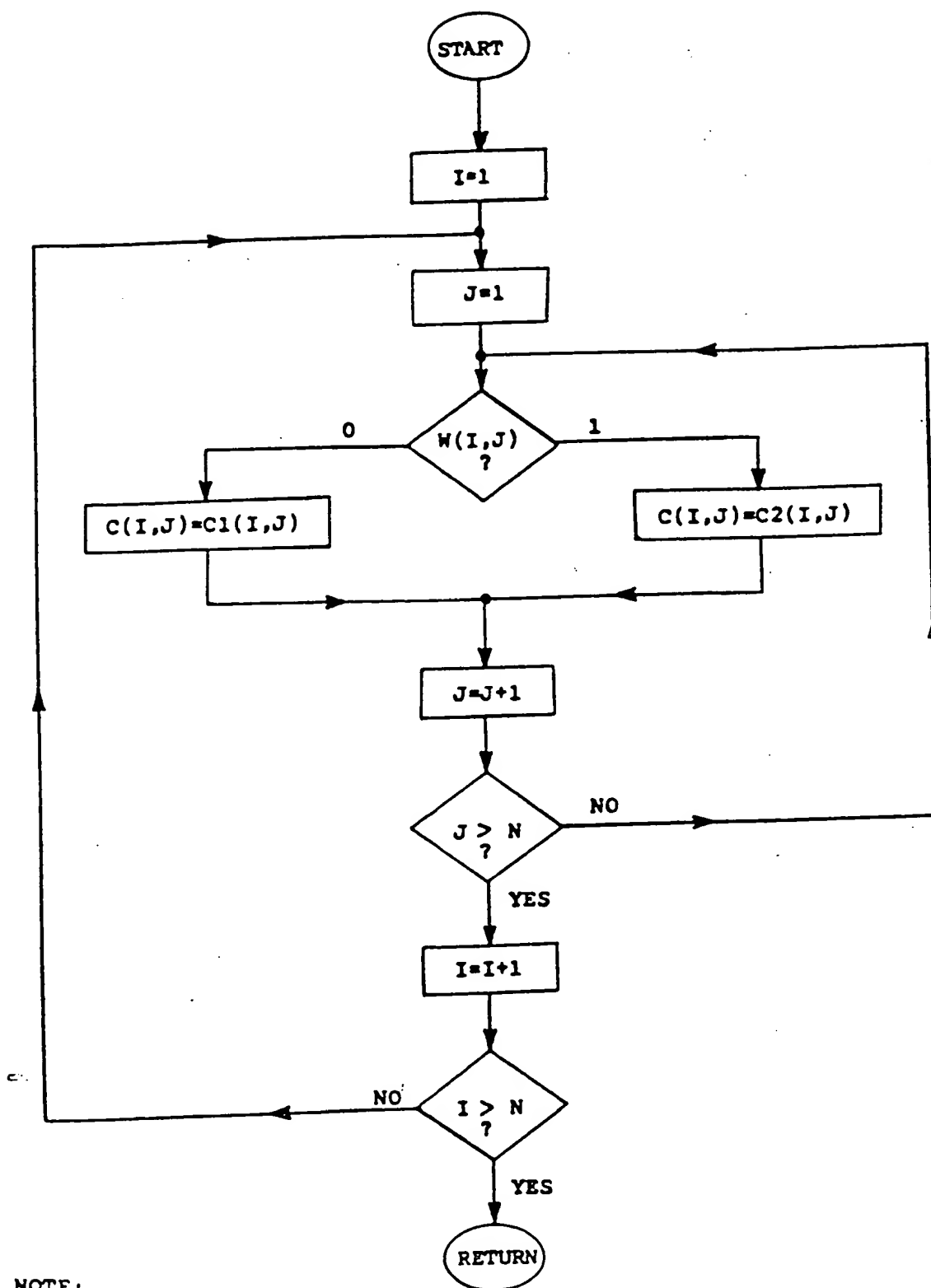






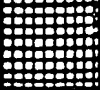



























FIG. 21







NOTE:

* SEE FIGURE 18 FOR EXPLANATION
OF PROGRAM VARIABLES.

FIG. 22

OPCODE	0 0 0	0 0 1	0 1 0	0 1 1	1 0 0	1 0 1	1 1 0	1 1 1
000								
001								
010								
011								
100								
101								
110								
111								

COLOR CODE	100	101	110	111
COLOR				

COLOR ASSIGNMENTS FOR N = 4

FIG. 23

OP- CODE	0 0 0 0	0 0 0 1	0 0 1 0	0 0 1 1	0 1 0 0	0 1 0 1	0 1 1 0	0 1 1 1	1 0 0 0	1 0 0 1	1 0 1 0	1 0 1 1	1 1 0 0	1 1 0 1	1 1 1 0	1 1 1 1
0000																
0001																
0010																
0011																
0100																
0101																
0110																
0111																
1000																
1001																
1010																
1011																
1100																
1101																
1110																
1111																

COLOR CODE	1000	1001	1010	1011	1100	1101	1110	1111
COLOR								

COLOR ASSIGNMENTS FOR N = 8

FIG. 24